

### **WHAT IS CLAIMED IS:**

1. A hydrogel composition comprising from 5 to 30 percent by weight of a polyurethane prepolymer, from 3 to 45 percent by weight of one or more alcohols selected from the group consisting of polyethylene glycol, polypropylene glycol and propylene glycol, and the balance water, accelerator and an additive.

2. The hydrogel composition of claim 1 wherein said additive is an anti-microbial agent and is added to reduce wound odor and risk of infection when used as a wound dressing.

3. The hydrogel composition of claim 1 wherein said additive is an anti-fungal agent and is added to reduce wound odor and risk of fungal infection when used as a wound dressing.

4. The hydrogel composition of claim 1 wherein said additive is an organic additive agent and is added to reduce wound odor when used as a wound dressing.

5. The hydrogel composition of claim 2 wherein said anti-microbial agent is selected from the group consisting of chlorhexidine acetate, chlorhexidine gluconate, chlorhexidine hydrochloride, and chlorhexidine sulfate, silver acetate, silver benzoate, silver carbonate, silver iodate, silver iodide, silver lactate, silver laurate, silver nitrate, silver oxide, silver palmitate, silver protein, and silver sulfadiazine, polymyxin, tetracycline, tobramycin, gentamicin, rifampicin, bacitracin, neomycin, chloramphenicol, oxolinic acid, norfloxacin, nalidixic acid, pefloxacin, enoxacin, ciprofloxacin, ampicillin, amoxicillin, piraricil, cephalosporins, vancomycin, and bismuth tribromophenate.

6. The hydrogel composition of claim 5 wherein said anti-microbial agents are in combination with other anti-microbial agents or other additives.

7. The hydrogel composition of claim 3 wherein said anti-fungal agent is selected from the group consisting of Tolnaftate, Miconazole, Fluconazole, Econazole, Ketoconazole, Itraconazole, Terbinafine, Amphotericin, Nystatin and Natamycin.

8. The hydrogel composition of claim 4 wherein said organic additive agent is selected from the group consisting of Grapefruit Seed Extract, Tea Tree Oil, Myrtle Oil, and Lemon grass extract.

9. The hydrogel composition of claim 1 wherein said hydrogel composition further includes a colorant such as an organic dye.

10. The hydrogel composition of claim 1 wherein said hydrogel composition further includes a colorant such as an inorganic pigment.

11. The hydrogel composition of claim 1 wherein said additive is a combination of an antimicrobial, an anti-fungal, and an organic additive.

12. A method of producing a hydrogel composition comprising:

forming a first solution of polyurethane prepolymer and polyethylene glycol;

forming a second solution of water, propylene glycol and accelerator;

adding an additive agent to either said first solution or said second solution; and

combining said first solution with said second solution.

13. The method of claim 12 wherein said additive agent is added to said first solution.

14. The method of claim 12 wherein said additive agent is added to said second solution.

15. The method of claim 12 wherein said additive agent is an anti-microbial agent.

16. The method of claim 12 wherein said additive agent is an anti-fungal agent.

17. The method of claim 12 wherein said additive agent is an organic compound.

18. The method of claim 12 wherein said combined first and second solutions are cast, molded and heated.

19. The method of claim 12 wherein said combined first and second solutions are cast and molded to form a wound dressing approximately 0.01 to 1.0 inch thick.

20. The method of claim 12 wherein said combined first and second solutions are cast and molded to form a wound dressing in the shape of a disc with a diameter ranging from approximately 1.0 inch to 12.0 inches.

21. The method of claim 12 wherein said combined first and second solution do not contain an additive.

22. The method of claim 12 wherein said combined first and second solutions are cast and molded in the shape of a rope approximately 2 to 12 inches in length and 0.1 to 2.0 inches in width.

23. A hydrogel composition comprising a polyurethane prepolymer, one or more alcohols selected from the group consisting of polyethylene glycol, polypropylene glycol and propylene glycol, and the balance water, and an accelerator.

24. The hydrogel composition of claim 23 wherein said hydrogel composition is cast and molded to form a dressing in the shape of a disc with a diameter ranging from approximately 1.0 inch to 12.0 inches.

25. The hydrogel composition of claim 24 wherein said dressing is used as a nursing pad for lactating mothers.

26. The hydrogel composition of claim 23 wherein said hydrogel composition is cast and molded to form a dressing in the shape of a rope approximately 2 to 12 inches in length and 0.1 to 2.0 inches in width.

27. The hydrogel composition of claim 26 wherein said dressing is used as a post operative dressing for rhinoplasty.

28. The hydrogel composition of claim 23 wherein said hydrogel composition is cast and molded to form a dressing approximately 0.01 to 1.0 inch thick.

29. The hydrogel composition of claim 23 wherein said dressing is used as a post operative dressing for mastectomy patients.

30. The hydrogel composition of claim 23 wherein said dressing is used as a pant liner for incontinent patients.